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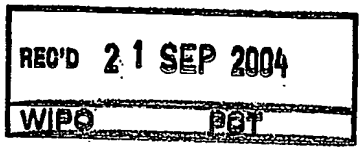

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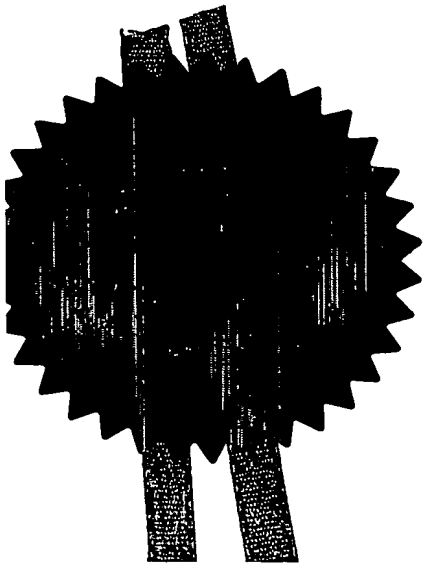

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21JUL03 E825900-1 C50092
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1.	Your reference	PCB/LW/P89438PGB
2.	Patent application number *(The Patent Office will fill in this part)*	19 JUL 2003 0316940.6
3.	Full name, address and postcode of the or of each applicant *(underline all surnames)*	Warren Ward Mindale, Ffordd Hendre Prestatyn LL19 8PG United Kingdom
	08674338001 Patents ADP number *(if you know it)*	
	If the applicant is a corporate body, give the country/state of its incorporation	
4.	Title of the invention	TREATMENT OF SKIN AND OTHER MEDICAL CONDITIONS
5.	Name of your agent *(if you have one)*	Marks & Clerk
	"Address for service" in the United Kingdom to which all correspondence should be sent *(including the postcode)*	43 Park Place Leeds LS1 2RY
	Patents ADP number *(if you know it)*	18013 ✓

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Country	Priority application number *(if you know it)*	Date of filing *(day/month/year)*

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TREATMENT OF SKIN AND OTHER MEDICAL CONDITIONS

The present invention relates to the treatment of medical conditions and particularly medical conditions at least partially characterised by blockage or other malfunction of ducts of exocrine glands and especially ducts of sweat glands.

People in advanced western societies such as the UK and USA are increasingly likely to suffer from a number of chronic diseases (e.g. essential hypertension, asthma, inflammation of the gastro-intestinal tract) and despite expensive medical intervention the incidence of such diseases continue to rise.

Several of these chronic conditions are known to be related to the blockage of ducts of exocrine glands. For example, it is well known that the blockage of sweat gland ducts and retained sweat can lead to Miliaria, an acute inflammatory skin condition better known as Prickly Heat.

Adult humans are estimated to have between 2 and 4 million sweat glands, with ducts to the skin surface. Sweat is known to be a fluid consisting mainly of water, with waste products such as urea, plus sodium and other salts.

Miliaria occurs when sweat gland ducts are obstructed. As a consequence, sweat does not reach the skin surface and is trapped in the epidermis or dermis, where it causes a prickling sensation often accompanied by severe itching. Even when ducts are blocked, the sweat glands continue to output fluid and just below the position of the blockage, the pressure of the sweat ruptures the duct and forces sweat into the surrounding skin. If sweat increases as a result of emotion, heat or exercise, then the amount of damage to the surrounding skin may be even greater.

Depending on the depth in which the obstruction occurs, different types of lesions appear. Ductal obstruction in the uppermost epidermis results in Miliaria crystallina with asymptomatic superficial vesicles, whilst obstruction with inflammation occurring deeper in the epidermis leads to Miliaria rubra, which is characterised by red lesions and appears

as pruritic and tender red macules or papules. This type of Miliaria can become infected and pustular and is very unpleasant. Current treatment consists of remaining in a cool environment for some weeks, and the topical application of pure lanolin, which has a temporary effect. If duct blockage occurs in the upper dermis, in a layer richly provided with nerve endings (the itch layer), then there is painful and pruritic inflammation. This is a previously unknown Miliaria type identified by the inventor (which he designates Miliaria type 3), and which he believes leads to atopic dermatitis or eczema. In the deepest and most severe form of Miliaria, called Miliaria profunda, ductal obstruction occurs near the entrance of the duct into the dermal papillae resulting in subtle asymptomatic, flesh coloured papules. In Miliaria profunda the sweat spreads into the surrounding skin and, unseen and unnoticed, ruptures adjacent blood capillaries. The inventor believes this to be a potential cause of essential hypertension, as more and more ruptured capillaries cause pressure in the blood circulation to rise, generally continuing to rise with age. The rupture of the capillaries may sometimes trigger the formation of dangerous thrombi, particularly in the lower legs.

Persons who are unacclimatised to heat but who remain in high ambient temperatures, or who exert themselves in high temperatures, are likely to suffer extensive acute Miliaria profunda. The blockage of many gland ducts disables the ability of the body to cool properly by sweat evaporation, potentially leading to heat exhaustion or heat stroke.

Miliaria can also occur where exercise is undertaken or there is heat exposure in persons wearing occlusive clothing. This is a common cause of various types of Miliaria for example in occupations such as mining, fire fighting, catering and other physical jobs in hot conditions.

Human facial skin is thin, being only about 10% of the thickness of skin on the back. Blockages in the sweat ducts of facial skin may result in any type of skin Miliaria, and the inventor found that a common type is a combination of Miliaria rubra and Miliaria type 3 (see above). This combination Miliaria is often temporary but may eventually cause chronic erythema, flushing, and blushing with cyclical crops of pustules and papules. Ultimately, particularly in men, this can lead to distinctive tissue hyperplasia and

disfiguring phyma, such as rhinophyma, a bulbous hypertrophy of the nose. The inventor believes this combination of Miliaria types may also result in rosacea featuring red lines, or telangiectasia, said to be characteristic thereof. Blockages of the sebaceous exocrine ducts of facial and other skin causes the common condition of acne vulgaris which often accompanies roseacea.

Furthermore, the inventor has found that, particularly in females, blockage of exocrine ducts may cause sweat filled vacuoles in the dermis. If the affected area of skin is subjected to pressure, for example the sitting contact area of the thighs and the buttocks, adipose tissue is extruded through the connective tissue of the border into the dermis to produce a characteristic irregular dimpled effect, better known as cellulite.

The inventor has found that the disease of psoriasis may be a type of Miliaria where as a result of trauma to the skin a microbial infection becomes trapped beneath sweat duct blockages.

The inventor has also recognised that many other diseases are affected by the blockage or other malfunction of exocrine ducts in tissues other than the skin.

He maintains that the blockage of exocrine ducts on the head, may cause constriction or interruption of blood circulation to the brain which itself may result in migraine. Furthermore, such chronic blockage may possibly lead to various types of neurodegeneration.

Cystic fibrosis is a congenital disorder of exocrine glands (including both mucus-secreting and eccrine sweat glands), which leads to excessive sodium chloride in sweat, and mucinous obstruction of the lungs, pancreas, liver, sperm and other glands. This disease is autosomal recessive - a mutant gene of chromosome 7 encodes abnormal transport of chloride across duct epithelial membranes. There is, at present, no way of correcting the underlying genetic mutation in cystic fibrosis and thus no curative treatment. However the known symptoms of this disease which occur in various body

tissues has indicated to the inventor the location of many different exocrine ducts which may be subjected to blockage or malfunction in a similar manner to sweat ducts.

The inventor has established that blockage of exocrine glands in the mucosal surfaces of the lungs contributes to asthma. He also believes that allergic rhinitis or hay fever is caused by a blockage of exocrine glands of the mucosal surface of the interior of the nose.

Any blockage of exocrine glands may affect the skin of the breasts, which are well supplied with sweat glands and ducts. Also female breasts have some degree of fluid secretion activity from milk glands throughout adult life, even when apparently not lactating. Additional milky discharge can also be due to drugs or hormones which stimulate milk production, or to mechanical stimulation of the nipple. The inventor believes that milk gland ducts are subject to blockage and rupture in the same manner as eccrine sweat ducts and that such blockages cause lumps, cysts, pain and tenderness in the female breast. Accordingly he believes these conditions are influenced by exocrine function.

Similarly, the inventor believes that blockage of the ducts of the prostate gland in men causes enlargement and pressure.

Furthermore, dry eye conjunctivitis and glaucoma can be caused by the blockage of exocrine ducts; and blockage or malfunction of exocrine glands of the mucosal surfaces of the gastro-intestinal tract is a cause of many inflammatory diseases including gastritis and colitis. Moreover, the inventor found that such inflammation of the gastro-intestinal tract, particularly inflammation of the intestines, might induce autoimmune responses which may cause diseases such as Crohn's disease, rheumatoid arthritis, osteoarthritis, systemic lupus erythematosus, ankylosing spondylitis, multiple sclerosis, motor neurone disease, polycystic ovarian syndrome, mitral valve syndrome, diabetes type 1, scleroderma, autoimmune thyroiditis, Graves disease and many others.

The blockage or malfunction of exocrine ducts of the lungs and gastro-intestinal tract is believed to involve a loss of mucosal surface innate immunity, thereby leaving the subject

open to air or fluid borne infection. The inventor therefore recommends that such conditions should be cleared up in persons likely to be exposed to pathogens, such as patients and staff in hospitals and before any medical procedures or medication programmes, including vaccinations, are commenced.

Also, especially in elderly persons who have extensive blockage of exocrine glands within skin, a lack of protection by skin anti-microbial peptide may lead to the easy entry of resident or common pathogens through the skin, potentially leading to severe infections.

It is well known that the disease of diabetes type 2 is associated with hypertension and with serum hyperglycaemia which is otherwise normally controlled by insulin hormone. It is the contention of the inventor that insulin producing pancreatic ducts function in the same manner as exocrine ducts. The excess output of insulin stimulated by hyperglycaemia is modified in passage through ducts and the modified insulin is no longer effective. This is "insulin resistant", known to be a cause of diabetes type 2.

Furthermore the inventor believes that excess output of the hormones of the stomach, intestines, liver and pancreas results in a partial loss of normal function of these hormones, leading to a loss of control of appetite. Thus any weight loss programme for obesity needs to include treatment of hormone producing exocrine ducts.

It is the object of the present invention to provide treatment for Miliaria and other disorders partially caused by the blockage or other malfunction of exocrine ducts.

According to a first aspect of the present invention there is provided the use of sodium chloride formulated such that it cannot cross epithelial barriers in the manufacture of a medicament for the treatment of medical conditions at least partially characterised by blockage or other malfunction of exocrine ducts.

Sodium chloride or common salt (chemical formula NaCl) occurs naturally in many parts of the world as the mineral, halite and as mixed evaporates in salt lakes. Chemically, sodium chloride is 60.663% elemental chlorine (Cl) and 39.337% sodium (Na).

Sodium chloride crystals are cubic in form and represent a preferred form of sodium chloride for use according to the first aspect of the invention.

It is more preferred that the sodium chloride is encapsulated by a coating agent. Such an agent should encapsulate sodium chloride crystals such that the coating is liquid impermeable but gas permeable. The inventor has termed such encapsulated crystals "Sensezero Therapeutic Inert Agent".

Encapsulated sodium chloride crystals represent an important feature of the present invention. Therefore, according to a second aspect of the present invention there is provided medically efficacious compound coated with an agent that forms a liquid impermeable but gas permeable layer for use as a medicament.

It will be appreciated that the coating of the second aspect of the invention may be applied to a number of medically useful compounds. It is most preferred that the compound is sodium chloride.

According to the second aspect of the present invention the coating surrounding the sodium chloride (e.g. sodium chloride crystals or granules) may be any liquid impermeable but gas permeable barrier which prevents the sodium chloride from passing into (e.g. when ingested) or onto the body. It is preferred that the agent is ceramic, more preferably a polymer and most preferably natural wax.

In a preferred embodiment of the second aspect of the present invention the sodium chloride is encapsulated in a sphere with an approximate diameter of 1mm to 10mm, preferably 3mm to 8mm, but mostly preferred 6 mm. The sphere may comprise compressed sodium chloride crystals coated with beeswax hardened with small amounts of cornstarch and talc.

It should be noted that normal dietary sodium chloride is not effective according to the present invention because such salt is able to be absorbed into the body by gastro-intestinal tract epithelia upon ingestion. Salt used according to the present invention is prepared such that this may not occur (e.g. according to the second aspect of the invention).

The following medical conditions are amongst the disorders that may be treated (prophylactically or when symptoms arise) by the use of sodium chloride according to the present invention:

Miliaria crystallina;
Miliaria rubra;
Miliaria type 3;
Miliaria profunda;
Chronic erythema;
Flushing and blushing with cyclical crops of pustules and papules;
Tissue hyperplasia;
Disfiguring phyma;
Rhinophyma;
Rosacea;
Telangiectasia;
Essential hypertension;
Migraine;
Neurodegeneration;
Cellulite;
Cystic fibrosis;
Asthma;
Allergic rhinitis;
Hay fever;
Atopic eczema;
Lumps and cysts of the breasts;

Prostate gland enlargement;
Dry eye conjunctivitis;
Glaucoma;
Inflammation of the gastro-intestinal tract;
Gastritis;
Colitis;
Crohn's disease;
Rheumatoid arthritis;
Osteoarthritis;
Systemic lupus erythematosus;
Ankylosing spondylitis;
Multiple sclerosis;
Motor neurone disease;
Polycystic ovarian syndrome;
Mitral valve syndrome;
Diabetes type 1;
Scleroderma;
Autoimmune thyroiditis;
Graves disease;
Diabetes type 2;
Hypertension associated with diabetes type 2;
Acne vulgaris; and
Obesity.

A preferred method for general treatment of the abovementioned conditions involves the application of sodium chloride so that it is in proximity to the blocked exocrine gland duct. It will be appreciated that the precise way in which sodium chloride is formulated and administered will depend on the individual conditions to be treated.

It will also be appreciated that the amount of sodium chloride that is required is determined by biological activity and bioavailability which in turn depends on the mode of administration, the physicochemical properties of any agent employed to coat the salt

and whether sodium chloride is being used as a monotherapy or in a combined therapy. The frequency of administration will also be influenced by a number of factors and particularly the health status of the subject being treated.

Optimal dosages to be administered may be determined by those skilled in the art, and will vary with the particular condition being treated, the strength of the preparation, the mode of administration, and the advancement of the disease condition. Additional factors depending on the particular subject being treated will result in a need to adjust dosages, including subject age, weight, gender, diet, and time of administration.

According to the present invention, the treatment of different types of Miliaria or other disorders described above may involve placing sodium chloride crystals in proximity to skin.

This may be achieved by any method of adhering salt crystals to skin but preferably avoiding direct contact between the salt and the skin. Preferred methods include the use of adhesive tape and Velcro bandages. However, the most preferred way of placing sodium chloride in proximity of the skin is by formulation of a patch. The patch may be a patch of any type of sticking device provided it holds sodium chloride crystals close to the skin. The inventor has termed such patches "Sensezero Therapeutic Inert Patches".

Such patches represent an important feature of the present invention and therefore in a third aspect of the present invention there is provided a patch suitable for adherence to skin containing sodium chloride adapted for use in the treatment of medical conditions at least partially characterised by the blockage or other malfunction of exocrine glands.

In a preferred embodiment of the third aspect of the present invention, the patch may be any type of sticking plaster suitable for adherence to skin, more preferably a water resistant plaster and most preferably a hypoallergenic water resistant plaster. The patch may be of any shape, however preferably it is in the form of a figure eight.

According to a most preferred embodiment of the third aspect of the present invention there are provided two spherical granules of pure sodium chloride on the patch and preferably, the sodium granules are held at a distance of 1mm to 1000mm apart, but most preferably the granules are held at 30mm apart. Preferably, the granules may be of 1-10mm diameter but more preferably granules are of 2.5mm diameter and have a coating. This coating is preferably as described by the second aspect of the present invention and is composed of waterproof and air permeable material which prevents delivery of the sodium chloride across the skin.

Another preferred method of placing sodium chloride crystals in proximity to skin is the use of a device which temporarily and at intervals places sodium chloride crystals against skin for a therapeutic purpose. The inventor has termed this "Sensezero Therapeutic Device".

Such a device represents an important feature of the present invention and therefore in a fourth aspect of the present invention there is provided a device consisting of a holder for a medically efficacious compound, an energy source and an actuator driven by the energy source for temporarily and at intervals placing the compound against the skin of a subject being treated for conditions at least partially caused by the blockage or other malfunction of exocrine glands.

According to the fourth aspect of the present invention, such a device may be a miniature encased device made from any material, preferably made from plastic. The device may be worn anywhere on the body but more preferably on the abdomen or thorax of a subject. Within the casing there may be source of energy such as a low voltage battery in addition to an electronic timer. The actuator may be a spring return push-rod solenoid. Preferably, pure sodium chloride crystals are placed in the holder. The sodium chloride may be coated with a coating according to the second aspect of the present invention. Such coated sodium chloride is waterproof and air permeable and thereby prevents delivery of salt across the skin.

Daily doses may be given as a single administration. Alternatively, the sodium chloride used may require administration twice or many times during a day. As an example, sodium chloride according to the invention may be administered by wearing the device continuously for as many days as required the device being activated for a few minutes in each hour. Alternatively a patient may take a daily dose comprising one patch which is replaced in a different position on the skin after each 24 hours.

Conditions at least partially characterised by a blockage or other malfunction of exocrine ducts may be treated with any one of the approaches encompassed by the first, second, third and fourth aspects of the present invention. For instance, a patch according to the third aspect of the invention may be applied in the abdominal region.

According to the present invention, the treatment of different types of Miliaria or other disorders at least partly characterised by blockage or other malfunction of exocrine ducts may involve placing sodium chloride crystals in proximity to skin. All conditions (skin and non-skin) may be treated in the same way (e.g. with a patch according to the third aspect of the invention on the skin, or alternatively use of the device according to the fourth aspect of the invention). Treatment can be reinforced and enhanced by simultaneously using a coated compound according to the second aspect of the invention which can also be used as a monotherapy.

Skin disease on the face, legs or arms may be treated by placing a patch according to the third aspect of the invention or device according to the fourth aspect of the invention on the abdomen or thorax, on unaffected skin if possible. Preferably with the additional use of a coated compound according to the second aspect of the invention in most cases. Non-skin disease may be treated in the same way. Some therapists might want to use a patch according to the third aspect of the invention or a device according to the fourth aspect of the invention or a coated compound according to the second aspect of the invention as a monotherapy. Following successful treatment of a disease, one of the three might be used periodically as a prophylactic.

However, it is preferred that the treatment of any of the conditions is enhanced synergistically by introducing into the body, orally or otherwise, sodium chloride in the form defined by the second aspect of the invention.

It will be appreciated that the invention (in all its aspects) is particularly useful for treating human subjects. However the subject may be any other mammal of veterinary interest.

Although the inventor does not wish to be bound by any hypothesis, he believes that sodium chloride can be used for the treatment of medical conditions at least partially characterised by blockage or other malfunction of exocrine ducts for the following reasons.

The inventor has considered the behaviour of modern humans in advanced societies. He has found that a change from an original genetic habituation (i.e. the status of Man in a natural habitat) to an adverse habituation (i.e. Man's unnatural or modern habitat) can result in several health problems including Miliaria disease and those mentioned above. He believes that such change may manifest in an altered physiology of exocrine glands and particularly sweat glands.

The inventor believes that normal sweat glands output sweat either at a basal level or at a higher level. This dual status of sweat glands is believed to be the natural state and the inventor has named this status as original genetic habituation of sweat glands.

In this natural state all sweat glands continuously produce sweat at the basal level. In general, increasing exercise or exposure to heat causes more and more sweat glands to become involved at the higher level. Regular vigorous exercise or exposure to heat is essential for maintaining the genetic habituation status of sweat ducts, as they lead to abundant flow of sweat resulting in clear ducts due to the physical force of fast flowing fluid.

Persons who do not exercise regularly, who encounter emotions like stress and who live in artificial and temperate climates experience repeated episodes of slightly greater sweat

output than the basal level. The inventor believes that, as a consequence, reabsorption of sodium by the duct becomes fixed at a slightly greater level causing the duct to remain in a state of adverse habituation even though the stimulus to sweat ceases. This acquired state predispositions an affected person to disorders related to the blockage of sweat glands since the salinity of the sweat sinks below the levels required for efficient skin protection against microbial pathogens by anti-microbial peptide. This enables microbes to enter ducts, which then become blocked by an ensuing immune reaction.

During the initial stages of his investigation of potential treatments of the abovementioned medical conditions, the inventor considered oceanic unicellular prokaryotes which existed at the beginning of the evolutionary time. These, like modern cells, actively transport sodium in and out to maintain a lower sodium internal environment. Since any body of water containing dissolved salts is subject to changes of concentration following natural flows and stratification, the inventor concluded that, for survival, the earliest prokaryotes must have been able to detect internal and external elements of dissolved molecules, and act on the information. He termed this detection ability "sensezero". The inventor then pictured the human body enveloped in fluid, with the skin and the lungs in contact with fluid in the form of a gas, i.e. air, and the gastro intestinal tract in contact with liquid. He concluded that, if the body senses the presence of surplus sodium in both the gas and the liquid environment, exocrine glands in adverse habituation are free to reset to genetic habituation.

Thus, according to the present invention, the basis for the treatment and prophylaxis of Miliaria and diseases mentioned above is to provide in the air and in the liquid environment of the body an amount of sodium, which appears to indicate a surplus to allow resetting to genetic habituation. Furthermore, to prevent desensitisation of the body to sodium chloride and the wearing off of the therapeutic effect, the inventor found that treatment and prophylaxis have to be arranged so that the body can sense new additional sodium salt without absorbing it. Accordingly, salt used according to the present invention should be made not to cross epithelial barriers.

The invention will be further described in the following Example and by the following figures, in which:

Figure 1 illustrates a patch according to the third aspect of the invention.
Figure 2 illustrates a device according to the fourth aspect of the invention; and
Figure 3 illustrates a section view of a device according to the fourth aspect of the invention.

In Figure 1: "A" illustrates a patch according to the third aspect of the invention showing the obverse adhesive coated side comprised of hypoallergenic water resistant plaster with two 2.5mm diameter spherical granules of coated sodium chloride approximately 30mm apart and fixed to the adhesive of the plaster; "B" illustrates the reverse side of the same hypoallergenic water resistant plaster; and "C" illustrates a side view of the hypoallergenic water resistant plaster showing two 2.5mm spherical granules of coated sodium chloride approximately 30mm apart and fixed to the adhesive of the plaster.

Figures 2 and 3 illustrate a device according to the fourth aspect of the invention. The scale is approximately 3 to1. These figures illustrate a block of coated sodium chloride approx 12mm x 13mm x 4mm (1); a spring return push rod solenoid (2); a low voltage battery (3); a electronic timer (4); handles to take belt or strapping (5); and a plastic casing for the device to be placed against the skin (6).

EXAMPLE

Experiments were conducted to illustrate that sodium chloride may be used according to the invention for the treatment of essential hypertension.

Hypertension is one of the major health problems of the developed world, affecting over 20% of the adult population. Essential hypertension has been defined as persistent high blood pressure of unknown cause. Untreated hypertension can lead to heart attack (myocardial infarction), congestive heart failure, other heart damage, arteriosclerosis, kidney damage, stroke, and loss of vision.

The classification of blood pressure in adults by the World Health Organisation and the International Society of Hypertension (revised 1999) is as listed in Table 1.

TABLE 1:

Classification	**Systolic**		**Diastolic**
Optimal	< 120	and	< 80
Normal	< 130	and	< 85
High-normal	130-139	or	85-89
Mild hypertension	140-159	or	90-99
Moderate hypertension	160-179	or	100-109
Severe hypertension	> 180	or	> 110

All values are mmHg. Measurements are taken with the subject in the sitting position.

Materials and Methods

Nine persons with mild, moderate, or severe hypertension were treated for four days with a patch according to the third aspect of the invention. On the afternoon of the first day of the trial, the blood pressure of each person was measured after the subject had been at rest seated for fifteen minutes. After a further ten minutes the blood pressure was measured again and the average of the two systolic readings and the average of the two diastolic readings was noted. Measurements were taken using the Omron 705IT Blood Pressure monitor, a clinically validated machine. Small, medium and large cuffs were available and selected according to the manufacturers' instructions.

Following measurement of blood pressure as described, the patch was applied at a position chosen by the subject on the front of the abdomen. Each subject was also given one 6mm diameter inert agent which was taken orally with about 200ml of water.

On the afternoon of the second day of the trial, blood pressure measurements were taken again, as on the first day. A new patch was applied in a new position on the front of the abdomen and the previous patch removed and discarded. On this day the inert agent was not taken.

On the afternoon of the third day blood pressure measurements were taken as on the first day. A new patch was applied in a new position on the front of the abdomen and the previous patch removed and discarded. Each subject was also given one 6mm diameter inert agent which was taken orally with about 200ml of water.

Each subject was given a patch to take away, with instructions that the patch was to be applied in a new position on the abdomen on the afternoon of the fourth day and at that time the old patch should be discarded.

On the afternoon of the fifth day blood pressure measurements were taken as on the first day. The subjects were then advised that the treatment was concluded.

On the afternoon of the seventh day blood pressure measurements were taken as on the first day.

Results

At the start of the trial four persons has mild hypertension, three had moderate hypertension and two had severe hypertension.

After four days, measurements of the blood pressure were taken and the results as listed in Table 2 show that following the above treatment, the average systolic blood pressure had been reduced by 27%, and the average diastolic by 18%.

After four days and at the end of the treatment, six subjects were now within the "optimum" classification of blood pressure, and two were now within the "normal" classification. One of the subjects originally having severe hypertension was now classified as having mild hypertension.

After six days, measurements of the blood pressure were taken and the results listed in Table 2 show that the beneficial effects of the treatment persisted after the treatment had been discontinued.

These data illustrate that the use of sodium chloride according to the present invention may easily and rapidly reduce blood pressure to within normal limits so that the subjects can no longer be considered hypertensive. The treatment has the effect of unblocking the exocrine ducts, allowing restoration of blood capillaries to their natural free flowing function.

The invention has the effect of resetting blood pressure to what is considered normal, or below normal. Essential hypertension is known to be only a slowly progressive disease and it is anticipated that following the treatment the subjects are unlikely to become hypertensive again for many months or some years. If, usually as a result of taking little

or no exercise, any of the subjects become hypertensive in the future then the same treatment can be repeated as often as is required.

Compared with treatments with pharmaceutical products which may need to be taken for a lifetime, which have unpleasant side effects, and which do not treat the underlying disease, the present invention is a much swifter, more effective and less costly treatment of essential hypertension with no known side effects.

In the trial eight subjects commenced with uncomplicated essential hypertension. As a result of the use of the invention all were brought within the normal optimum classification. Subject 06, a male aged 65, was found to have had multiple arterial surgery including the insertion of stents. He benefited from the treatment in that the hypertension due to capillary disruption resulting from blocked exocrine ducts was successfully treated, and he was left with only the hypertension due to his arterial condition. Thus his overall hypertension was reduced from severe to mild classification.

TABLE 2:

Subj No. M/F Age		Before Trial	After 1 day	After 2 days	After 4 days	Percent reduction	After 6 days
(01) F55	Syst	158	139	122	108	31%	106
	Diast	88	74	67	62	30%	58
(02) M62	Syst	162	135	121	103	35%	102
	Diast	89	78	70	58	33%	47
(03) M55	Syst	157	122	122	118	24%	120
	Diast	77	78	78	68	9%	72
(04) F49	Syst	196	160	124	122	37%	128
	Diast	96	93	81	78	18%	78
(05) F50	Syst	157	122	122	123	21%	122
	Diast	72	72	72	70	2%	70
(06) M65	Syst	175	167	157	154	12%	155
	Diast	90	90	90	85	5%	86
(07) M52	Syst	188	149	131	128	31%	125
	Diast	108	96	88	78	27%	79
(08) F54	Syst	146	135	129	114	15%	119
	Diast	88	83	83	77	12%	80
(09) M52	Syst	162	140	133	116	22%	116
	Diast	98	90	89	80	18%	78

CLAIMS

1. The use of sodium chloride formulated such that it cannot cross epithelial barriers in the manufacture of a medicament for the treatment of medical conditions at least partially characterised by blockage or other malfunction of exocrine glands.

2. The use according to claim 1 wherein the sodium chloride is in crystal form.

3. The use according to claims 1 or 2 wherein the sodium chloride is coated with an agent that forms a liquid impermeable but gas permeable layer.

4. The use according to claim 3 wherein the agent is a ceramic, a polymer or a natural wax.

5. The use according to claim 3 wherein the agent encapsulates sodium chloride to form a sphere.

6. The use according to claim 5 wherein the sphere is of a diameter between 1mm and 10mm.

7. The use according to claims 5 or 6 wherein the sphere comprises sodium chloride crystals coated with beeswax hardened with cornstarch and talc.

8. A medically efficacious compound coated with an agent that forms a liquid impermeable but gas permeable layer for use as a medicament.

9. Sodium chloride coated with an agent according to claim 8 wherein the coating agent is defined by any one of claims 3 to 7.

10. A patch suitable for adherence to skin containing sodium chloride adapted for use in the treatment of medical conditions at least partially characterised by the blockage or other malfunction of exocrine glands.

11. The patch according to claim 10 comprising a sticking plaster suitable for adherence to skin.

12. The patch according to claim 11 comprising a hypoallergenic water resistant plaster.

13. The patch according to claims 11 or 12 in the form of a figure eight.

14. The patch according to claim 13 further comprising two spherical granules of sodium chloride.

15. A patch according to any one of claims 10 to 14 further comprising coated sodium chloride according to claim 8.

16. A device consisting of a holder adapted for holding a medically efficacious compound, an energy source and an actuator driven by the energy source for temporarily and at intervals placing the compound against the skin of a subject.

17. The device according to claim 16 adapted to be worn around the abdomen or thorax of a subject.

18. The device according to claims 16 or 17 wherein the energy source is a low voltage battery.

19. The device according to any one of claims 16 to 18 further comprises an electronic timer.

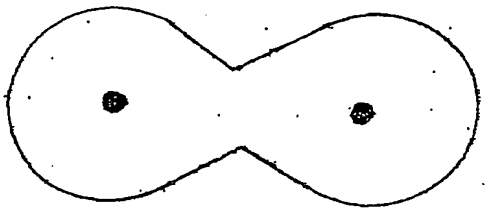
20. The device according to any one of claims 16 to 19 wherein the actuator is a spring return push-rod solenoid.

21. A device according to any one of claims 16-20 adapted to hold sodium chloride.

22. A device according to any one of claims 16 to 20 adapted to hold sodium chloride coated according to claim 8.

Fig 1

"A"



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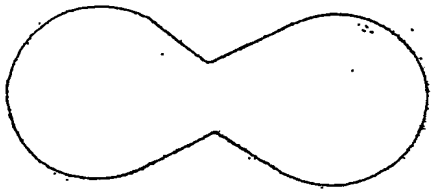

"C"

Fig 2

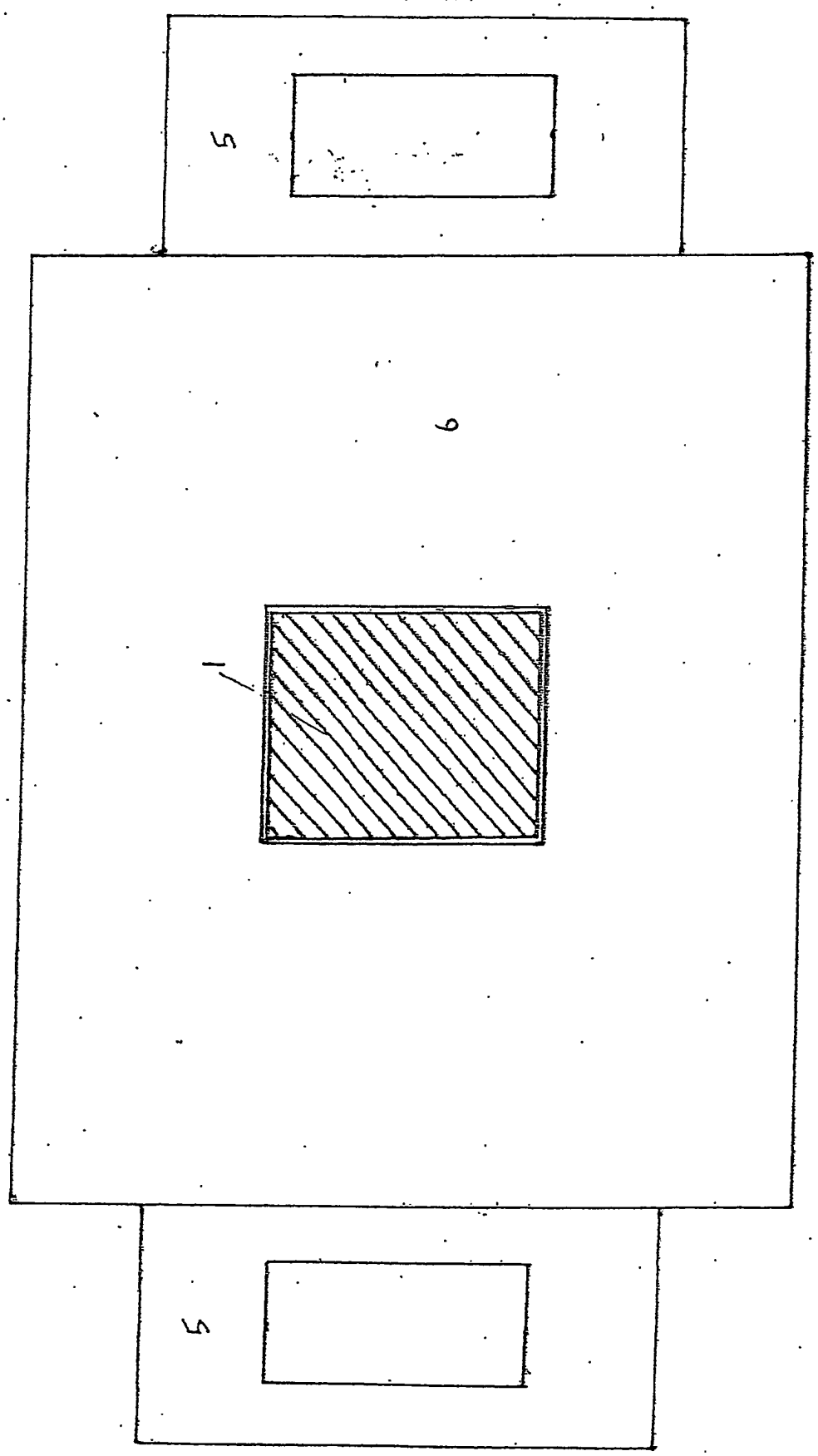

Fig 3